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ABSTRACT

The purpose of this study was to investigate the utility of a structural-developmental approach as a basis for a philosophy of education for the public community college of the Midwestern United States. The structural-developmental approach was explored within the broader cognitive studies of the Piagetian tradition in America. The method of research employed was a combination of analysis of relevant literature and empirical investigation at a community college. A research instrument was used to assess the cognitive stage of development of critical groups of students. The drop, course withdrawal, grade point average, and cognitive stage data of lower ability vocational-technical, lower ability transfer, and upper ability students were compared and analyzed, with a .05 level of significance as the criterion for differences. The following conclusions were drawn from the findings and the results of the analyzed information: (1) there is a need for a broadly based psychology of education in the community college movement; (2) vocational/technical programs provided no unique solution to the breadth of the educational task; (3) diversity in student capability demanded a more universal basis for a philosophy of education; (4) the myth that the Piagetian tradition was age-bound at a level below community college functions was destroyed; (5) Piagetian tradition provided a universal kind of basis for a philosophy of education; (6) natural diversity of the college was conducive to a broadly based psychology of the individual student; (7) cognitive stages were found to be relevant to the educational process of the college; and (8) a cognitive-developmental approach in grades 13 and 14 would provide continuity. (Author/DB)

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AN INQUIRY INTO THE PIAGETIAN TRADITION IN AMERICA AS A BASIS FOR A PHILOSOPHY OF EDUCATION AT THE COMMUNITY COLLEGE LEVEL: A QUASI-EXPERIMENTAL APPROACH

JC 730 057

by
Clinton J. Humbolt

Doctoral Dissertation
Walden University
November 1972

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ABSTRACT

The purpose of this study was to investigate the utility of a structural-developmental approach as a basis for a philosophy of education for the public community college of the Midwestern United States. The structural-developmental approach was explored within the broader cognitive studies of the Piagetian tradition in America.

The method of research employed was a combination of analysis of relevant literature and empirical investigation at a community college. This combination was explored in order to determine the possible abstraction of a structural-developmental pattern as a potential base for theory building. A research instrument was used to assess the cognitive stage of development of critical groups of students. The drop, course withdrawal, grade point average, and cognitive stage data of lower ability vocational-technical, lower ability transfer, and upper ability students were compared and analyzed, with a .05 level of significance as the criterion for differences.

Regarding the relationships of vocational-technical courses and transfer courses, the following observations

seemed justified concerning the abstraction level required: (1) no evidence was gained to support the notion of a true difference in abstraction level required, (2) limited data from other literature offered no substantial support for a true difference, and (3) an argument from silence suggested no true difference.

Regarding supportive evidence for the utility of a cognitive-developmental-structural approach to the rural community college educational task, the following summary of findings seemed justified: (1) course withdrawal, grade point average, and cognitive stage data of upper ability and lower ability students appeared to indicate a utility for the approach; (2) consistency theory offered the possibility of a favorable climate for an interactional (naturalistic and environmental) approach such as was investigated; (3) the literature within the community college framework suggested the need for a more comprehensive philosophy than had crystalized; and (4) the literature which had explored the ramifications of the Piagetian tradition in America provided a rationale for a cognitive-developmental-structural approach.

From the findings and the results of the analyzed information in this study, the following conclusions seemed

justified: (1) evidence from literature and empirical investigations demonstrated the need for a broadly based psychology of education not presently apparent in the community college movement; (2) vocational-technical programs presented no unique solution to the breadth of the educational task; (3) diversity in student capability demanded a more universal basis for a philosophy of education; (4) evidence from the literature and empirical inquiry destroyed the myth that the Piagetian tradition was age-bound at a level below community college functions; (5) Piagetian tradition provided a universal kind of basis for a philosophy of education; (6) natural diversity of the college setting studied was conducive to a broadly based psychology of the individual student; (7) cognitive stages were abstracted from the mental functions of students involved in the study and found to be relevant to the educational processes of the community college; and (8) implementation of a definitive cognitive-developmental approach to the educational task of grades thirteen and fourteen would have the advantage of providing a continuity with the educational modes of grades one through twelve.

Recommendations that seemed warranted were (1) recognition of the utility of a structural-developmental approach; (2) acceptance of qualitative differences in stages of mental development; (3) an incremental approach to the developmental tasks, (4) instructional design accommodating invariant stages of thought development; (5) involvement of instructors in affective and motivational teaching; (6) exploration of new techniques and approaches; and (7) replication of notions and techniques of the structural-developmental approach to the educational task of the rural community college.

ACKNOWLEDGMENTS

The counsel of Dr. "Del" Zhiri was invaluable in this inquiry. His specialties as well as his international understandings provided helpful and appreciated contributions.

Dr. Lawrence Kohlberg was most gracious in allowing the use of techniques which he had developed. His humanistic concerns for education, including the community college movement, were most appreciated.

The inspiration of the Walden Faculty originally contributed to the courage neccessary for this undertaking. The nurture provided by the Walden spirit gave sustaining fortitude for this accomplishment.

Paramount among the reasons for this accomplishment was the unfailing devotion and patience of my wife, Arleta, and my children: Allen, Alicia and Celeste. This has indeed been a family undertaking with thanks due to each one of them.

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CHAPTER I

INTRODUCTION

The current community college movement has its task broadly defined as the extension of educational opportunity.[1] As early as the middle of the sixties Richard Pearson acknowledged the trend as follows:

> The elementary and secondary schools of the country are now fully committed to the entire cross-section of the American youth, whatever the differences are that exist among them. The persistent annual increase in college enrollments can only be interpreted as meaning that the colleges and universities of the country are being asked to assume an equally broad responsibility for all the youth of the country, at least through the fourteenth year. From the perspective of the individual young people who will join the student population of the future, the curriculum of the country's colleges and schools must somehow accomodate all of them in all their individuality.[2]

The individuality to which Pearson alluded above was probably broadened by the open door policy of the

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[1]Edmund J. Gleazer, Jr., This Is the Community College (Boston: Houghton Mifflin Company, 1968), p. 46.

[2]Richard Pearson, "The Challenge of Curricular Change," cited by Edmund J. Gleazer, Jr., This Is the Community College (Boston: Houghton Mifflin Company, 1968), p. 47.

community college and by the movement toward no failure and no attendance requirement policies.[1] Gordon B. Pyle, under sponsorship of the Colorado State Board for Community Colleges and Occupational Education, suggested that the abstract concepts required in much education beyond the high school are new to some students coming from families who have not previously sought collegiate education and recommended that colleges might explore the implementation of non-punitive grading systems.[2] These trends appeared to suggest the need for an examination of current underlying philosophies in the community college movement.

Those pressures toward an enlargement of opportunities for occupational skills expansion also affected the community colleges. Officials concerned with occupational education programs saw the community college as the logical institution in which to locate many such

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[1]The community college in this study has recently followed this trend on both counts.

[2]Gordon B. Pyle, Action Steps for Reaching the Disadvantaged in Colorado (Colorado State Board for Community Colleges and Occupational Education, March, 1970), p. 6.

programs. The Education Commission of the States under the direction of Wendell H. Pierce provided some guidelines for this emphasis through the Occupational Education Commission report. This emphasis included the following:

> . . . Those (curriculums) of semi-professional character, those dealing with the education of various types of technicians, and curriculums that prepare workers for certain skilled occupations find the community college a desirable setting.
>
> The prestige of the institution, the breadth of general education course offerings, the support offered as a part of higher education, and the like, together with increasing concern for occupational education by community college leaders, make it a logical place in which to expand the overall program of post-secondary occupational education. The recent rapid growth in new community colleges based upon many years of solid development offer an opportunity for assuming a major responsibility for education beyond the high school. Failure to do so may result in the establishment of less desireable types of programs outside the mainstream of education.[1]

As late as 1972 community college enrollments continued to rise and variety of abilities and demands spread, maximizing the need for an organizing approach to this kind of diversity.[2]

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[1]Education Commission of the States, Occupational Education: Changing Contexts, Report No. 1 (Denver: November, 1967), p. 17.

[2]These data were presented in an address by Edmund J. Gleazer, Jr., at the January 10, 1972, meeting of the Kansas Association of Public Community Junior Colleges.

Purpose of the Study

It was the purpose of the study (1) to gain data relevant to a structure-of-the-mind model in the Piagetian tradition in America, (2) to analyze such data in relationship to the applicability of a structure-of-the-mind concept at a rural midwestern community college, (3) to provide a core concept for a curricular philosophy of education, and (4) to make inquiry into the question of whether or not mental functions of community college students could be abstracted by stages of developmental thought.

Among the questions to be considered pertaining to the purpose of the study, including traditional criteria and updated Piagetian cognitive stages, were the following:

1. How did the dropout rates of lower ability rural community college students compare in (1) vocational-technical programs and (2) transfer programs, when the two groups were matched in measured ability.
2. How did the withdrawals from first semester freshman level courses compare for matched ability groups of lower ability students in (1) vocational-technical courses and (2) transfer courses.

3. How did the withdrawals from first semester freshman level courses compare for upper ability and lower ability community college students.
4. How did the first semester freshman grades of measured lower ability students compare to the first semester grades of measured upper ability community college students.
5. How did the first semester freshman grades of the vocational-technical students compare to the first semester freshman grades of the transfer students, when the two groups had been matched as lower academic ability students.
6. How did the measured cognitive stages of lower ability freshman students compare to the measured cognitive stages of upper ability freshman students.
7. How did the measured cognitive stages of lower ability vocational-technical students compare to the measured cognitive stages of lower ability transfer students.

The author's experience in community college teaching, contact with colleagues in the community college

task, and early investigations of the literature regarding the nature of the educational process in the community college suggested that:

1. Teachers of transfer courses offered on the campus under study required more abstracting ability of lower ability students than did teachers of vocational-technical courses.
2. Community college students measuring in the lower ranges in developed ability also measured relatively low in cognitive stages of development as exemplified by responses on moral dilemmas.
3. Community college students measuring in the upper ranges on developed ability also measured relatively high in cognitive stages as exemplified by responses on moral dilemmas.

Importance of the Study

Wide variation in philosophies of education appeared to be affecting community college campuses. Perhaps representative of one extreme of the educational theory dimension was what might be called the "big men in the community theory." These influencial laymen were

notably vociferous in their comments. Harry S. Broudy expressed their feelings in the following way:

> They want "hard" subjects like science, mathematics and languages in a prescribed curriculum and no coddling of either low or high I.Q.'s. They want an intellectual elite in order to maintain leadership in war and peace. They are Realists not simply because they face "unpleasant reality" but also because, if really hard pressed to justify their proposals, they might admit that they believe people who can learn hard subjects are "better" than those who can not and that a society is bound to go to pot if it is not led by such "better" people.[1]

The influence of such a layman was not unsupported by faculty members of the community college who appeared committed to the belief that the new generation should take on the noblest and best elements of Western culture. The achievement of such an aspiration would require an abstracting ability which was not apparent from testing data on community college student norms.[2]

In contrast to the rigorous demands mentioned above was the emphasis of such leaders of the community

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[1]Harry S. Broudy, "Realism in American Education," Readings in the Foundations of Education, ed. James Stone and Frederich Schneider (New York: Thomas Y. Crowell, 1971), Vol. II, p. 480.

[2]The American College Testing Program, Inc., Manual for the ACT: Institutional Self-Study Survey (Iowa City, Iowa, 1969).

college movement as the Executive Secretary of the American Association of Junior Colleges, who in a previous citation defined the task as the extension of educational opportunity.[1] W.L. Gragg also made a relevant restraining comment when he said, "The goal of being comprehensive is both noble and unattainable."[2] William L. Camp emphasized the need for research in the area under study as follows:

> There is a current need for practical study in local college systems to test the worth of old ideas, materials, practices, and the contingent educational results. The essential thing is to gather evidence to supplant unsupported ideas.[3]

Pressures from the wide variation in philosophies of education were felt on many community college campuses. The campus under study was probably no exception. It had programs of study which emphasized the skills and trades and also had the usual transfer programs. The vocational-technical programs especially appeared to be geared to a

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[1]While Gleazer has broadly defined the task of the community college, he has insisted upon the dignity of the task.

[2]W. L. Gragg, "Community College: Viable Higher Education," Improving College and University Teaching, Spring, 1969, p. 81.

[3]William L. Camp, "Educational Research and the Junior College," Improving College and University Teaching, Spring, 1969, p. 83,

functional developmental approach, resembling the concrete operations of Jean Piaget[1] or the structure-of-the-intellect notions of J. P. Guilford.[2] Theoretically, the student who might function toward the concrete operations end of Piaget's continuum rather than toward the more sophisticated abstracting end of the continuum should find more success in those classes which were closest to his level of mental function (or in classes geared to meet individual needs). This appeared to make sense, even though Piaget has been interpreted to insist that his stages were age-functional.

With reference to the community college educational task, Lawrence Kohlberg's structural-developmental constructs seemed to offer promise.[3] His theories, which he suggested had been directly influenced by Piagetian

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[1]John L. Phillips, Jr. presents Piagetian ideas for teachers in The Origins of Intellect: Piaget's Theory (San Francisco: W. H. Freeman and Company, 1969), pp. 7-11.

[2]J. P. Guilford, The Nature of Human Intelligence (New York: McGraw-Hill Book Company, 1967), p. 67.

[3]Lawrence Kohlberg, "The Development of Modes of Moral Thinking and Choice in the Years Ten to Sixteen" (Unpublished Doctoral Dissertation, Psychology Department, University of Chicago, 1958).

notions, were explored in some detail. Kohlberg's moral judgment situations were used as a qualitative measure of the mental stage of selected students in the community college setting involved in the study. The author's experience suggested that the nature of community college teaching necessitated the formulation of educational philosophy for the broadened task which has emerged. A structural-developmental model was conceived as a potentially beneficial solution.

Methods of Procedure

In addition to analysis of related literature and discussion of theoretical concepts, a quasi-experimental design was implemented in November of 1971.

Population Selection.--The subjects were not a selected representative group for the campus, per se, but were constituted of the entire responding population of the freshman student body in one fall semester which fitted the categories later described. Reasonable exceptions occurred in questionnaire response, such as special students who had not taken the American College Testing program, students not then available for personal reasons such as a selective service call, students absent

on the occasion of the questionnaire, and students refusing to respond.

Students referred to as lower ability students were those roughly thought of as being in the lower quartile on the American College Testing program by local norms, but explicitly the cutting point for inclusion was either of the following: (1) a standard score in English of fifteen or less or (2) a standard composite score of fifteen or less.

The group referred to as upper ability students was selected by meeting the following ACT scores: (1) a standard score in English of twenty-three or greater or (2) a standard composite score of twenty-three or greater. This roughly constituted the upper quartile by local norms though not by national college norms, national norms being considerably more superior.

Method of Data Collection.—The major tool for data collection was a questionnaire schedule designed by the author and appearing in complete form in Appendix A. It consisted of a modification of Kohlberg's Moral Judgment Situations which are designed to render qualitative categories of the developmental stages of moral judgment.

Lawrence Kohlberg's situations were adapted to the population in question, with some exclusion of items because of the excessive number of subjects in the study population. Each of the subjects was given the opportunity to respond with his judgment. These responses were taken, inasmuch as possible, in a campus classroom setting. Independent judges were then employed to place the various responses in qualitative levels and stages. These data constituted the major data for analysis.

Additional relevant data were available through the counseling services of the college. These data included ACT scores for group selection and comparison, first semester college grades, personal data, and drop-out information.

Treatment of Data.—Because of the assumptions made and the qualitative aspects of research tools used, nonparametric measurement techniques were employed in data collection and treatment. Levels of significance were determined by Pearson Chi Square techniques for the variables under consideration, with two by two, three by two, five by two, or six by two tables used where clearly applicable. The null hypothesis was used with decision

ruled at the .05 level. The outcomes were presented elsewhere in graphic form and were discussed.[1]

Limitations of the Study

The setting for the study was the campus and student body of a rural community college in Kansas with an enrollment below 1,000 students. Selected students in the study might or might not be considered representative of community college students elsewhere except as national normative data were applicable. The first intent of the study was to determine campus conditions and draw curricular and theoretical implications from these conditions and data.

The study attempted to give rigorous attention to the applicability of a cognitive-structural-developmental approach as a possible theoretical model for curricular planning in the community college under study.

Even though a major tool in the study was an analysis of student responses to moral dilemmas, the author was not primarily interested in the development of

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[1]Robert B. McCall, Fundamental Statistics for Psychology (New York: Harcourt Brace and World, Inc., 1970). A modern work in statistics with relevant examples.

moral judgment, per se. The tool was used as a special case of the mental functioning of students. This functioning was conceived as patterns or structures abstractable from the raw data of social behavior.[1] These structural-developmental measures were used to provide definitions of individual differences which might be significant variables in the education (social) tasks of the community college teachers.

While the hope of the author appeared to be auspicious, namely the development of a philosophy of public education for grades thirteen and fourteen, this expectation did not entail a completed theory per se. The intent was only to investigate the utility of a structural-developmental approach and to make a major contribution in the direction of a more useful scheme of education at the community college level.

Definition of Terms

Several terms were used in this study which could have been interpreted in various manners in other

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[1]Lawrence Kohlberg, "The Cognitive-Developmental Approach to Socialization," Handbook of Socialization Theory and Research, ed. D. Goslin (Chicago: Rand McNally and Company, 1969), p. 369.

settings. An attempt was made in definitions to limit the possible connotations and, if possible, to use operational definitions.

Abstracting ability.—By abstracting ability reference was made to symbolic and semantic kinds of thinking.

Academic abilities.—Academic abilities referred to that ability to perform in the academic setting as measured by performance on the American College Testing program--a measure of developed scholastic ability.

Community college.—The term community college as used in the study made reference to the two-year college serving a variety of educational functions. Such a higher education institution has two clearly discernable roles, one occupational and the other transfer.

Concrete operations.—Concrete operations or thinking can be defined as figural information. Thinking of a concrete nature was thought of as essentially tangible in contrast to abstract which was symbolic and semantic.

Drop.—The term drop or drop out referred to a complete drop of enrollment from a semester of school.

Junior college.—The terms community college and junior college could be used interchangeably in this study. The junior college is a two-year college offering grades thirteen and fourteen, but could lack the comprehensive aspects implied in the community college.

No attendance requirement policies.—An academic policy in a college which specified that absences from classes had no direct effect, per se, upon forced withdrawal or failing grades was a no attendance requirement policy. Grade determinations must be made on the basis of other data than attendance records.

Occupational education.—Occupational education is a term which was used to refer to courses and programs of study offered by the community college which were basically career and job oriented in their design rather than basically transfer and general in nature.

Open door policy.—The open door policy referred to college admission policies admitting any individual for college credit who had a high school diploma or its equivalent, regardless of abilities or grades. Other people could enroll for non-credit regardless of credentials.

Qualitative measurements.—The qualitative approach to analysis in this study assumed an invariant developmental sequence marked by discrete categories which were different in kind among the stages. In this conceptualization the categories were not one continuous function as was the case with quantitative measurement. The six categories of moral development could just as profitably be conceived in A, B, C, D, E, and F terms rather than 1, 2, 3, 4, 5, and 6 terms. Qualitative categories would not allow for a single measurement of two and six-tenths any more than a measurement of D and one-half would be expected to occur. However, this procedure did allow for an analysis of progression from stage to stage in a sequence of categories.

Structure-of-the-mind.—The term structure-of-the-mind was used to convey the idea that a morphological model could be used to describe the nature of human intelligence. Structure or cognitive structure could be explained by parameters of organizational wholes or systems of internal relations. Structure, then, would refer to characteristics of shape, pattern, or organization of response.

Structure-of-the-mind applicability.--The use of the term applicability with reference to the structure-of-the-mind referred to the concept of general relevance and appropriateness without implying the implementation of a systematic scheme (capacity of being usable upon the point made).

Utility.--The use of the term utility, like applicability, referred to the essential notion of a condition or quality of being useful, without implying the implementation of a systematic scheme.

Vocational-technical.--The term vocational-technical was used on the campus under study to refer to career or occupational courses or programs of study.

CHAPTER II

SELECTED PERTINENT LITERATURE: BACKGROUND THEORIES AND NOTIONS ABOUT HUMAN THOUGHT PROCESSES

Although the present study revolved around a cognitive-developmental approach to human thought processes, it was necessary to explore rather thoroughly the broader literature out of which such cognitive-developmental methods and data had emerged. The purpose of Chapter II was to provide the closely related milieu of thought that bears eventually on the specific educational task of the rural community college. Chapters III and IV will be found to have dealt more explicitly with the applicability of the cognitive-developmental approach to the curriculum and instruction of the community college.

Cognitive Consistency Notions

Since the middle of the fifties increasing attention had been given to the idea of cognitive consistency.

This classification may encompass similar theories which might have been called by such names as balance, symmetry, congruity, or dissonance. As Newcomb had pointed out, this family of ideas seemed to hold in common the idea that the person behaves in a way that maximizes the internal consistency of his cognitive system.[1] William J. McGuire was interested in this kind of inquiry in the hope it could throw light on the thought processes, but observed that the consistency need appears to have become more of an end to be studied in its own right.[2] McGuire, however, continued to intuit that a person tries to maximize the fit rather than to minimize the discrepancies, continued to build a specific model of logic that held mental reservation, and continued to think in terms of the structure of human thought.

It was George Kelly who suggested that each person is a miniature scientist, thus himself implying

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[1]Theodore M. Newcomb, "Introduction," in Theories of Cognitive Consistency: A Sourcebook, ed. by Robert P. Abelson et al. (Chicago: Rand McNally and Company, 1968), p. xv.

[2]William J. McGuire, "Theory of the Structure of Human Thought," in Theories of Cognitive Consistency: A Sourcebook, ed. by Robert P. Abelson et al. (Chicago: Rand McNally and Company, 1968), p. 141.

something about the universality of mental functions.[1] The Piagetian tradition also placed awareness on the universality of thought patterns, and it was in this tradition that McGuire suggested more attention be given to the possibility that primitive thinking is not confined to the adults in mental institutions or to the preliterates.[2] Abdelwahed Zhiri, in a recent comparative education study,[3] had observed that the education of Tropical African youths prior to contact with the white man was largely by imitation and apprenticeship, which might resemble John Dewey's ideas about learning. Likewise, as McGuire observed, "the analyses of Levi-Strauss and other cultural anthropologists who have tried to formalize and describe the laws of thought purportedly followed by preliterate peoples. . . . have often suggested that the sophisticated thought modes

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[1]George A. Kelly, The Psychology of Personal Constructs (New York: Nortons, 1955), p. 10.

[2]McGuire, op. cit., p. 162.

[3]Abdelwahed Zhiri, "A Study of Foreign Aid to Education in Some Developing Countries of Africa," (Unpublished Doctoral Dissertation, Graduate School, University of Wyoming, 1968), p. 11.

followed by educated adults in our own Great Society are not as far removed from primitive thinking as is usually supposed."[1] McGuire went on to suggest that the thought modes which Levi-Strauss intuited as operating in the savage mind were the core of all human thinking, with correctives to be considered.

Adaptation-level Theories

Adaptation-level theory of one sort or another was found within the broader framework of cognitive consistency theory, although specific aspects might predominate in A-L Theory.[2] Peak pointed out that the vocabulary might include such terms as assimilation, averaging, pooling, or summing; but the outcome was a compromise between the responses to the separate stimuli.[3] The activation aspect of these kinds of studies appeared when one observed that compromise responses tended to

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[1]McGuire, op. cit., p. 162.

[2]Harry Helson, Adaptation-level Theory (New York: Harper-Row, 1964).

[3]Helen Peak, "Activation Theory," in Theories of Cognitive Consistency: A Sourcebook, ed. by Robert P. Abelson et al. (Chicago: Rand McNally and Company, 1968), p. 227.

occur when stimulus inputs activated points lying relatively close together. At greater distances, the differences in response patterns have been seen to increase and contrasts have resulted.[1] In this vein, Marlowe, Frager, and Nuttall reported an investigation which involved two groups of subjects, all of whom were first asked to indicate their attitudes toward Negroes by filing a questionnaire. The experimenter then announced that if the questionnaire showed the "right attitudes," the subject could stay after the experiment and fill out more questionnaires for which he would be paid one dollar and fifty cents (Group I) or twenty dollars (Group II). After the experimenter had examined the answers, he reported, "I am sorry but you don't have the right attitudes. You won't be able to fill out the other questionnaires for twenty dollars (one dollar and fifty cents). I'm looking for people a little less open-minded." The experimenter then explained that another person in the building wanted to see the subject for a few minutes. When the subject subsequently arrived in the

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[1] Ibid.

second room, experimenter number two then described a visiting Student Exchange Program for which he was organizing a volunteer guide service. A group of Negro students was to come to the campus in ten days, and the subject was asked if he would be willing to volunteer.[1]

The number of subjects volunteering to guide the Negro students was significantly greater for persons who believed they had "lost" twenty dollars than for those "having lost" only one dollar and fifty cents. The authors of these and similar studies have interpreted results as supportive of dissonance (consistency) theory.[2]

Authors of the above research presented the state of the dissonance in the mind of the subjects thus: "I believe something which is true and good and it cost me twenty dollars."[3] While Peak questioned the validity of the above analysis, the outcome of that inquiry did not

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[1]D. Marlowe, R. Frager, and R.L. Nuttall, "Commitment to Action-taking as a Consequence of Cognitive Dissonance," Journal of Personality and Social Psychology, II (1965), 864-867.

[2]Ibid.

[3]Peak, op. cit., p. 229.

invalidate the research for the purposes of this paper. The point being substantiated was that a wide variety of investigative procedures had been applied to the question of mental structure, functions, and patterns. A highly relevant aspect of the consistency inquiry had been its struggle with factors governing choice. These factors seemed to this researcher to have been isomorphic with cognitive-developmental inquiries of researchers such as Lawrence Kohlberg,[1] Jean Piaget,[2] John Dewey,[3] and Alfred Baldwin.[4] For instance, the dilemma tools used by Kohlberg[5] and R. Kramer[6] had a decided choice factor,

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[1]Lawrence Kohlberg, "The Cognitive-Developmental Approach to Socialization," in Handbook of Socialization Theory and Research, ed. by D. Goslin (Chicago: Rand McNally, 1968), pp. 347-480.

[2]Jean Piaget, The Moral Judgment of the Child (Glencoe, Illinois: Free Press, 1948).

[3]John Dewey, Moral Principles in Education (Boston: Houghton Mifflin, 1909).

[4]Alfred Baldwin, "A Cognitive Theory of Socialization," in Handbook of Socialization Theory and Research, ed. by D. Goslin (Chicago: Rand McNally and Company, 1969), pp. 325-345.

[5]Kohlberg, "Moral Thinking," 1958.

[6]R. Kramer, "Moral Development in Young Adulthood," (unpublished Ph.D. dissertation, University of Chicago, 1968).

in which the moral decision-making process had been the element of interest for this researcher's purposes. As Marlowe and others indicated, "prediction follows from the assumption that by taking action the person can overtly demonstrate to himself how important the beliefs are, thereby minimizing further discomfort of having suffered them."[1]

For the purposes of the research at hand, consistency theory was thought to be too broadly based to be immediately applicable to curriculum building in the community college. More viable have been the notions of cognitive-developmental thinkers because, for one thing, the thirteenth and fourteenth grades were developmental processes. Likewise, public education in the United States had been postulated on a moral socialization base as well as a cognitive one. John Dewey verbalized this in regarding education as a social process, even regarding the school as a form of community life.[2] Perhaps

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[1]Marlowe, et al., op. cit., p. 865.

[2]An interpretation given by William Ragan and George Henderson, Foundations of American Education (New York: Harper and Row, Publishers, 1970), p. 55.

Theodore Brameld stated the ultimate in the societal purpose for education as follows:

> I hold with the strongest conviction of which I am capable that our schools and colleges, abroad as well as in America, require one overarching purpose . . . . to channel and release the full resources of education in behalf of the creation of world civilization--a world civilization capable of preventing destruction and of providing the peace and abundance that men everywhere crave.[1]

While cognitive consistency notions and Adaptation-level theory provided a general climate of thought closely related to the study, the explicit theory which received crucial attention was the cognitive-developmental approach, treated more fully in Chapter IV.

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[1]Theodore Brameld, "World Civilization, the Galvanizing Purpose of Public Education," in New Dimensions for Educational Progress, ed. by Stanley Elam (Bloomington, Indiana: Phi Delta Kappan, 1962), pp. 11, 12.

CHAPTER III

PERTINENT LITERATURE: JUNIOR AND COMMUNITY COLLEGE RESEARCH

By the seventies the unique American educational institution--the two year college--had become a multi-purpose institution serving an increasing variety of functions. As Brue, Engen, and Maxey pointed out, two particular roles fell to the community college. These were preparing students for transfer and for occupations.[1]

Medsker found that students in community colleges often seemed to be undecided about their actual purpose in choosing a particular program, even though the occupational programs offered this emphasis. In his study Medsker found that two-thirds of the entering two-year students planned to transfer to a four-year institution,

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[1]Eldon Brue, Harold Engen, and E. Maxey, How Do Community College Transfer and Occupational Students Differ (ACT Research Report No. 41, Iowa City, Iowa, February, 1971), p. 1.

but only two-thirds actually transferred.[1] Medsker attributed much of the transfer emphasis to the social and cultural values in our society.

J. E. Roueche made a similar kind of observation in noting that most of the research studies had focused on the students who transferred to four-year schools and the criterion had been success there.[2] A follow-up study by Ronald Hopkins (see Appendix B for an abstract) on transfer students from the college in this study indicated a satisfactory history of transfer.[3] As in other studies, successful transfer was a basic criterion. The groups of (1) transfer and (2) occupational students had seldom been compared according to Roueche's observations. One major aspect of this current study was the examination of the transfer and vocational students.

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[1]L. L. Medsker, The Junior College: Progress and Prospect (New York: McGraw-Hill, 1960), p. 116.

[2]J. E. Roueche, "Gaps and Overlaps in Institutional Research," Junior College Journal, 1967, 38 (3), 20-23.

[3]Ronald G. Hopkins, "A Follow-up Study of the 1966, 1967, and 1968 Graduates of the Garden City Community Junior College," (unpublished Specialist thesis, Field Study, Fort Hays Kansas State College, 1969).

Munday found that transfer students scored higher on academic examinations than did occupational students, except that studies of female students showed no significant academic differences in the sub-groups.[1] If this trend for female students held locally, it might have been a significant factor because "recycling of older females" is common in the community college under study.

Occupational students generally came from lower socio-economic backgrounds and showed less scholastic aptitude than did transfer students in a recent study by Brue, Engen, and Maxey.[2] Despite lower academic test scores and high school grades the occupational students made higher college grades than the transfer students. This could theoretically be accounted for by (1) differences in technical and mechanical skills, and by (2) differences in difficulty level in the two kinds of programs. No empirical evidence was available on the question of the difficulty level, and the data on the

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[1]L. A. Munday, "A Comparison of Junior College Students in Transfer and Terminal Curricula," Journal of College Student Personnel, 1968, 9, 325-329.

[2]Brue et al., op. cit., p. 8.

technical and mechanical skills was contradictory.[1] The procedures of the author's study explored some of Fenske's implications about grades made by occupational students and were reported in the treatment of Chapter V. Inferences about difficulty level in the two kinds of programs might prove fallacious if grades were the criterion of difficulty level.

Regarding evidence from the literature for the need of a study like the one undertaken, Wattenbarger and Bender made the following observations:

> The phenomenal development of new community colleges during the decade of the Sixties has captured the attention of the nation as a democratization of higher education moves from dream to reality. Many have described this revolutionary development in numbers of new institutions and new students served, but as yet few have examined the emerging challenges confronting all of higher education within the context of the Seventies. The Sixties have represented increasing numbers with little concern about the direction of the increase in opportunity (Italics mine).[2]

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[1]R. H. Fenske, "Who Selects Vocational-technical Post-high School Education," in Monograph Two: The Two-Year College and Its Students: an Empirical Report (Iowa City, Iowa: The American College Testing Program, 1968), p. 6.

[2]James L. Wattenbarger and Lewis W. Baker, "Challenge Ahead: State-Level Control," Junior College Journal (June/July, 1972), pp. 17-20.

There emerged a need for more definitiveness in the educational task and curricular theory of the community college movement. The need for definitiveness was evident in such statements as the following by Jerome Bruner, "The teacher's task as communicator, model, and identification figure can be supported by a wise use of a variety of devices. . . ."[1] Also, John O. Hunter made this comment:

> If the community college faculty is to make any authentic pedagogical claims to excellence, it must be recognized as a faculty of culture, stressing not necessarily scholarship but creativity of another kind and of a very high order.[2]

In the above references, the philosophy appeared too vague for usefulness. If not scholarship, what was the task? Hunter's words sounded impressive, but the seventies demanded that "creativity of another kind and of a very high order" be defined. It was toward that kind of undertaking this study attended.

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[1]Jerome S. Bruner, The Process of Education (Cambridge, Massachusetts: Harvard University Press, 1969), p. 91.

[2]John O. Hunter, "Faculty Evaluation as a Liberal Persuasion," Improving College and University Teaching, XVII (Spring, 1969), p. 92.

CHAPTER IV

RELEVANT STUDIES IN THE PIAGETIAN TRADITION

Jean Piaget has been an enduring and powerful force in educational thought, even on the American scene. As John L. Phillips, Jr. indicated, a cognitive trend has been seen in the literature of American psychologists, with increasing numbers of writers interested in Piaget.[1] Harold Hodgkinson ascribed an updating of Piaget's research to Lawrence Kohlberg on the American scene.[2]

The purpose of this chapter was to provide a rationale for the application of updated Piagetian theory to the educational task of the community college movement. The author was aware of the notion that Piagetian theory could not be stretched to apply to seventeen and

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[1]John L. Phillips, Jr., The Origins of Intellect: Piaget's Theory (San Francisco: W. H. Freeman and Company, 1969), p. vii.

[2]Harold L. Hodgkinson, "Walden U.: A Working Paper," in Soundings (New Haven, Connecticut, 1969), p. 185.

eighteen year old students. Because of the history of thought on this question the author offered considerable analysis to the naturalistic, structural, and developmental issues under the updated package, namely, Lawrence Kohlberg and his group.

Alfred Baldwin formulated a cognitive theory of socialization in which he attempted to explain how the child became an individual who could fit into his society, who could share its beliefs and values and who acquired and used skills that were important for the maintenance of society.[1] It appeared that public education adopted these goals when it adopted grades thirteen and fourteen as a part of the system. Baldwin's assumptions appeared to be representative of the assumptions underlying cognitive-developmental theories in general and Kohlberg's in particular. Baldwin assumed:

1. That the first stage in the chain of events initiated by the stimulus situation and resulting in the behavioral act was the construction of a cognitive representation of the distal environment. . . .

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[1]Alfred L. Baldwin, "A Cognitive Theory," p. 325.

2. The acquisition of the content of the cognitive representation followed in general the principles of learning: contiguity, generalization, reinforcement and repetition and contrast. . . .
3. The cognitive representation changed in character as the child grew. . . .
4. Cognitive acquistion was furthered by specific kinds of information-getting behavior. . . .
5. Some of this information-getting behavior was motivated by cognitive unclearness or confusion (existemic motivation, as used elsewhere). . . .[1]

In some contrast to associationistic theories like Baldwin's, were Kohlberg's notions of a cognitive-developmental nature, which were presented here in the following summary assumptions:

1. Basic development involved basic transformations of cognitive structure which could not be explained or defined by the parameters of associationistic learning and which had to be explained by parameters of organizational wholes or systems of internal relations.

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[1] Ibid., pp. 326-328.

2. Development of cognitive structure was the result of processes of <u>interaction</u> between the structure of the organism and the structure of the environment, rather than being the direct result of maturation or the direct result of learning. . . .
3. Cognitive structures were always structures (schemata) of <u>Action</u>. While cognitive activities moved from sensori-motor to the symbolic to verbal-propositional modes, the organization of these modes had always an organization of actions upon objects.
4. The direction of development of cognitive structure has been toward greater equilibrium in this organism-environment interaction. . . .
5. Affective development and functioning, and cognitive development and functioning were not distinct realms. "Affective" and "cognitive" development had been parallel; they represented different perspectives and contexts in defining structural change.
6. There was a fundamental unity of personality organization and development termed ego. . . .

7. All the basic processes involved in "physical" conditions, and in stimulating developmental changes in these conditions, were also basic to social development.

8. The direction of social or ego development was also toward an equilibrium or reciprocity between the self's actions and those of others toward the self. (Italics mine.)[1]

In Kohlberg's research, "structure" referred to general characteristics of shape, pattern, or organization of response, rather than to the rate or intensity of response or its pairing with particular stimuli. Both Jean Piaget[2] and Kohlberg[3] conducted studies of morality development from a structural point of view, focusing on an examination of the modes of thought underlying moral responses. They had also maintained that the organization of a child's thought was qualitatively different

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[1]Lawrence Kohlberg, "The Cognitive-Developmental Approach," p. 349.

[2]Jean Piaget, op. cit.

[3]L. Kohlberg, "The Development of Children's Orientations Toward a Moral Order: I Sequence in the Development of Moral Thought," Vita Humana, 1963, 6, 11-13.

from that of an adult and that the study of moral development included a sequential stage analysis of developmental changes.[1]

The concern of this study followed Kohlberg's lead in attending to the thought structure behind the content. Neither the content nor the morality has been the major concern.

The hypothetical moral dilemmas used in this study posed a conflict between two culturally unacceptable (or acceptable) alternatives (see Appendix A). For instance, it was culturally unacceptable to steal, but it was culturally unacceptable to allow one's wife to die if it could be prevented by stealing the drug. By designed stories that did not have a culturally correct answer, it was possible to partially circumvent the normative problem and to elicit moral reasoning rather than moral knowledge or opinion.[2]

Kohlberg identified six qualitatively different

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[1]Elliot Turiel, "Developmental Processes in the Child's Moral Thinking," Trends and Issues in Developmental Psychology, ed. by Paul Mussen et al. (New York: Holt, Rinehart and Winston, 1969), pp. 96-97.

[2]Ibid.

modes of thought successively followed in the moralization process. Piaget had previously classified types of wrong answers on the Binet test and so had moved beyond an analysis of intellectual development in terms of the numbers of right and wrong answers. He moved to an analysis in terms of differences in structure and so brought a new day to developmental-cognitive studies.[1]

In this Piagetian tradition the six stages postulated by Kohlberg were framed within three levels: the premoral, the conventional, and the principled.[2] In the preconventional level the child was responsive to cultural rules and labels of good and bad, right or wrong but interpreted these nomenclature in terms of either the physical consequences of action or in terms of the physical power of those who enunciated the rules.

The preconventional level presented two stages as abstracted by Kohlberg. In stage one the physical consequences of action determined its goodness or its

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[1]Jean Piaget, The Child's Conception of the World (New York: Harcourt, Brace, 1928).

[2]Lawrence Kohlberg, "Development of Moral Character," Developmental Psychology Today (Del Mar, California: CMR Books), p. 306.

badness. Avoidance of punishment and deference to power were valued in their own right. Stage two defined right action as that which instrumentally satisfied one's own needs and occasionally the needs of others.

Turiel illustrated the underlying premoral thought structure in the case of an uncle who decided to tell his five-year old nephew that he (the uncle) had once been in jail--although he had never been. The boy's reaction to this news was one of disbelief and a demand for some reassurance that it was not true. The elder man failed to reassure and when the nephew seemed convinced, he backed away, glared at his uncle from the other end of the room, and would not speak to him for the rest of the day.[1]

In contrast to the above is the story told about Thoreau who was jailed for refusing to pay city taxes. One day his friend Emerson was walking in the street past Thoreau's window when he spotted Thoreau peering through the bars. Emerson rushed to the window and asked, "Henry, what are you doing in there?" Thoreau replied, "Waldo, what are you doing out there?"

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[1]Turiel, op. cit., p. 94.

By some standards Thoreau could be regarded as possessing less moral development than the lad, but in terms of the moral reasoning rather than the moral knowledge Thoreau has been acknowledged to have been highly moral.[1]

Kohlberg's research indicated that the process of moral development was more gradual and long term than was pictured by some theorists, including assumptions of B.F. Skinner who, in "Walden Two," projected ethical training to be completed by the age of six.[2] Kohlberg found that even at the ages of eight and nine children were at a premoral level in which right and wrong were defined in terms of punishment and conformity to power figures. On the surface the behaviors looked like moral judgment but investigative techniques probing into the judgmental process showed that the children's thoughts were premoral, as defined in stages one and two above. From what is known of Thoreau, his responses probably reflected the mature thinking of level III, which

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[1] Ibid.

[2] B.F. Skinner, "Walden Two," in Classroom Psychology: Readings in Educational Psychology, ed. by Morse and Wingo, 3rd edition (Glenview, Illinois: Scott, Foresman and Company, 1971), p. 77.

Turiel observed did not begin to appear until about the age of sixteen.[1]

Consideration was given to the varying emphases of environmental, maturational, and interactional theories of the origins of mental structure. These considerations were thought to underlie the above discussion. Distinctions between the emphases were not based on quantitative assumptions about the role of heredity in the formation of individual differences. Gesell[2] and Lorenz,[3] for instance, recognized the importance of environmental stimulation in modifying genetically grounded behavior patterns, and Hull[4] recognized the quantitative role of hereditary traits in causing individual differences. The crucial consideration was which set of factors was seen as the source of basic patterning--innate or environmental determinants.

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[1]Turiel, op. cit., p. 97.

[2]A. Gesell, "The Ontogenesis of Infant Behavior," Manual of Child Psychology, ed. by L. Carmichael (New York: Wiley, 1954).

[3]K. Lorenz, Evolution and the Modification of Behavior (Chicago: University of Chicago Press, 1965).

[4]Clark Hull, Principles of Behavior (New York: Appleton-Century, 1943).

In the nativistic view the patterns were given by templates in the genotype, with learning having occurred in certain interstices or open places in the genetic pattern.[1] It was in this same general framework that Gesell stressed the unfolding of maturational stages, with age-specific behavioral forms believed to be wired into the organism.[2]

On the other hand, learning theorists from John Locke to B. F. Skinner viewed the structure of behavior as the result of the association of stimuli with one another. The structure of the outside world was the source of the child's cognitive structure.[3]

Piaget demonstrated that cognitive structures are not copies of reality and that the moral stages do not represent successive acquisitions of patterns presented to the child by the culture.[4] As replicated by Kohlberg[5]

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[1]Lorenz, op. cit.

[2]Gesell, op. cit.

[3]Kohlberg, "The Cognitive-Developmental Approach," p. 352.

[4]Jean Piaget, The Psychology of Intelligence (New York: Harcourt, Brace, 1950).

[5]Kohlberg, "Moral Thinking," 1958.

and R. Kramer,[1] the moral stages of development represented qualitatively different modes of organizing the social and moral world through which the child passes.

Level two in Kohlberg's stages of moral development (stages three and four) has been called the conventional level, in which the maintenance of expectations of the individual's family, group, or nation was perceived as valuable in its own right. The attitude was one of supporting, maintaining, and justifying the order and of identifying with the persons or group involved in it.[2]

The two stages in level two were referred to as stages three and four, keeping them in the larger six stage sequence. Stage three was referred to as the "good boy" or "nice girl" orientation in which good behavior was that which helped others or pleased them or was otherwise approved by them. In this stage the phrase "he means well" became important for the first time.

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[1]R. B. Kramer, "Changes in Moral Judgment Response Pattern During Late Adolescence and Young Adulthood: Retrogression in a Developmental Sequence" (Unpublished doctoral dissertation, University of Chicago, 1968), p. 5.

[2]Kohlberg, "Development of Moral Character," p. 307.

Stage four was the "law and order" stage in which the orientation was toward authority, fixed rules, and the maintenance of the social order. Right behavior consisted of doing one's duty, showing respect for authority, and maintaining the given social order for its own sake.

In abstracting the stages of moral thinking, Kohlberg used thirty basic moral concepts that can be found in any culture. One example that illustrated that the stages defined total ways of thinking, not just attitudes toward a situation, was the concept of the "value of the human life." In response to the question, "Should the doctor mercy kill a fatally ill woman requesting death because of her pain?" a stage three sixteen-year old then replied, "It might be best for her, but her husband--it's a human life--not like an animal, it just doesn't have the same relationship that a human being does to a family. You can become attached to a dog, but nothing like a human you know."[1]

In stage four life was conceived as sacred in terms of its place in a categorical moral or religious

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[1] Ibid., p. 308.

order of rights and duties. A representative stage four sixteen year old responded to the same question as follows:

> I don't know. In one way, it's murder, it's not a right or privilege of man to decide who shall live and who should die. God put life into everybody on earth and you're taking away something from that person that came directly from God, and you're destroying something that is very sacred, it's in a way part of God and it's almost destroying a part of God when you kill a person. There's something of God in everyone.[1]

Level three, which contained stages five and six, saw moral value residing in conformity by the self to shared or shareable standards, rights, or duties. There was an effort in this post-conventional, autonomous, or principled level to define moral values and principles that have validity and application apart from the authority of the groups or persons holding these principles.[2]

Stage five in level three emphasized the contractual legalistic orientation in which there was recognition of an arbitrary element or starting point in the rules or expectations for the sake of agreement.[3] In this quality of thinking duty was defined in terms of contract, general avoidance or violation of the will of others, and majority

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[1] Ibid. [2] Ibid.

[3] Kohlberg, "The Cognitive-Developmental Approach," p. 376.

will and welfare. Kohlberg illustrated this stage five with Jim, age twenty, who in response to the mercy killing question, said:

> Given the ethics of the doctor who has taken on responsibility to save human life--from that point of view he probably shouldn't, but there is another side, there are more and more people in the medical profession who are thinking it is a hardship on everyone, the person, the family, when you know they are going to die. When a person is kept alive by an artificial lung or kidney it's more like being a vegetable than being a human who is alive. If it's her choice, I think there are certain rights and privileges that go along with being a human being. I am a human being and have certain desires for life and I think everybody else does, too. You have a world of which you are the center, and everybody else does, too, and in that sense we're all equal.[1]

For the purpose of the study it was noted that stage five was illustrated with a twenty year old, which was contrary to the notion that the Piagetian tradition was applicable only through the early school years. These kinds of evidences were used to demonstrate that cognitive-developmental structure was not restricted to age limitation, as might have been supposed.

Stage six of level three was the conscience or principle orientation. This was an orientation not only to actually ordained social rules but to principles of

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[1]Kohlberg, "Development of Moral Character," p. 308.

choice involving appeal to logical universality and consistency. In this stage human life was believed to be sacred, entailing a universal human value of respect for the individual. An illustration of this thinking was Jim at age twenty-four in response to the question, "Should the husband steal the drug to save his wife? How about for someone he just knows?" (See Appendix A for the dilemmas). Jim responded: "Yes. A human life takes precedence over any other moral or legal value, whoever it is. A human life has inherent value whether or not it is valued by a particular individual."[1]

Having completed an overview of the cognitive-developmental approach and data supporting it, the author, then, pursued the more explicit applicability of this tradition to the educational task of the community college.

With an overview of the stages of moral development in mind, it was noted by Piaget that moral stages did not represent successive acquisitions of patterns presented to the child by the culture.[2] They represented

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[1] Ibid.

[2] Piaget, Psychology of Intelligence.

qualitatively different modes of organizing the social and moral world. Kohlberg viewed these series of stages as forming an invariant sequence in which the attainment of a new stage was dependent upon the attainment of the preceding stages, but Kramer placed some qualification on this concept, which will be analyzed later in this portion.[1] Kohlberg saw the core of the cognitive-developmental position as the doctrine of cognitive stages, which had the following general characteristics:

1. Stages imply distinct or qualitative differences in children's modes of thinking or of solving the same problem at different stages.
2. These different modes of thought form an invariant sequence, order, or succession in individual development. While cultural factors may speed up, slow down, or stop development, they do not change its sequence.
3. Each of these different and sequential modes of thought forms a structured whole. A given stage-response on a task does not just represent a specific response determined by knowledge and familiarity

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[1]Kramer, op. cit., p. 161.

with that task or tasks similar to it. Rather it represents an underlying thought-organization, e.g. "the level of concrete operations," which determines responses to tasks which are not manifestly similar. According to Piaget, at the stage of concrete operations, the child has a general tendency to maintain that a physical object conserves its properties on various physical dimensions in spite of apparent perceptual changes (constancies). This tendency is structual: it is not a specific belief about a specific object. The implication is that both conservation and other aspects of logic should appear as a logically and empirically related cluster of responses in development.

4. Cognitive stages are <u>hierarchical integrations</u>. Stages form an order of increasingly differentiated and integrated structures to fulfill a common function. . . .[1]

In regard to invariance, Turiel noted that movement from one stage to the next did not involve an

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[1]Kohlberg, "Cognitive-Developmental," pp. 352-353.

addition to the earlier stage, but was a reorganization displacing the less advanced stage.[1]

As previously noted, Kohlberg rejected the naturalistic (or maturational) explanation for the invariance which seemed apparent. The interactional conception was adopted by Kohlberg and has significance for pedagogy and curriculum as was the concern of this study, which was discussed later. The interactional conception of stages differed from a maturational one in that it assumed that experience was necessary for the stages to take the shape they do as well as assuming that generally more or richer stimulation will lead to faster advances through the series involved.[2]

As mentioned above, teaching practices can be expected to be influenced by such notions as maturation, interaction, and structures as discussed. To illustrate the relevance of these thoughts to philosophy of education for a community college, allusion was made to a quotation from the master American educator, John Dewey:

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[1]Turiel, op. cit., p. 97.

[2]Kohlberg, "Cognitive-Developmental Approach," p. 356.

> I believe that this educational process has two sides—one psychological and one sociological. . . . Of these two sides, the psychological is the basis. The child's own instincts and powers furnish the material and give the starting point for all education.[1]

As R. Mason observed, Dewey indicated that the child's own instincts and powers were not naturally given but were themselves culturally produced.[2] Examination of such statements indicated that Kohlberg's kind of thinking was not exactly foreign to the American educational scene. For instance, Dewey's concept of experience was complimentary to Kohlberg's emphasis on action when Kohlberg said cognitive structures were always structures (schemata) based on action.[3] In this same vein both Dewey and Kohlberg attended to the naturalistic determinants but turned to experience (Dewey) and interaction (Kohlberg) as the crucial questions. On one occasion Dewey said, "Psychology is concerned with life-careers,

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[1]John Dewey, "The Pedagogical Creed of Professor John Dewey," Educational Creeds of the Nineteenth Century, ed. by O.H. Lang (New York: Kellog, 1898), p. 6.

[2]Robert E. Mason, "Dewey's Culture Theory and Pedagogy," John Dewey: Master Educator, ed. by William Brickman and Stanley Lehrer (New York: Society for the Advancement of Education, 1959), p. 72.

[3]Kohlberg, "Cognitive-Developmental Approach," p. 348.

with behavior as it is characterized by changes taking place in an activity that is serial and continuous, in reference to changes in an environment which is continuous while changing in detail."[1] However, it was not the purpose at hand to analyze Dewey, only to point out that Kohlberg's underlying notions had a long heritage in American education.

With reference to invariance in the stages of cognitive development, Kramer made some observations which had implications for educational practices as advanced as at the community college level. He theorized that the lower stages of judgment (Kohlberg's stages one, two, and three) certainly existed in adulthood, and could also be considered embryonic counterparts of the three higher stages of judgment (four, five, and six). Kramer's reasoning followed the lines that stage one thinking (obedience and punishment orientation) was considered as an immature type of stage four thinking (authority and social order maintaining orientation). Together they had been purported to represent the early and late phases in the

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[1] John Dewey, "Experience and Conduct," Psychologies of 1930, ed. by C. Murchison (Worcester: Clark University Press, 1930).

development of the dependent mode. Likewise, the instrumental hedonism of stage two thinking (right action consists of that which instrumentally satisfies one's own needs and occasionally the needs of others) was an early and less differentiated version of stage five (the social-contract, legalistic orientation). Finally, Kramer reasoned that the two phases in the development of the integrated mode would be reflected in the cognitive stance of the good-boy conformist of stage three or the principled inner conscience oriented stage six.[1]

Futhermore, the invariance question was perhaps more appropriately apperceived by reference to universality of the sequential stages. The stages of moral development (an example of social development) appeared to be culturally universal. Kohlberg had studied in Atayal, Taiwan, Mexico, Turkey, Yucatan, and the United States. In those studies he found the same basic ways of moral valuing in every culture, and he found that they developed in the same order in each culture. As the sequence was not dependent upon a particular national culture, neither was it dependent upon a particular religion

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[1]Kramer, op. cit., p. 161.

at all in the usual sense.[1] Kohlberg found no important difference in the development of moral thinking among Catholics, Protestants, Jews, Buddhists, Moslems, or atheists. In reiteration, sequential stages seemed to be a product of an interaction of innate and environmental factors.

With regard to the possible applicability of cognitive-developmental theory to community college tasks, Kramer's findings had significance. He concluded from his studies with modified moral dilemmas like Kohlberg's that it was primarily only individuals who had not developed a stable type four orientation (authority and social order maintaining) by the last year of high school who continued to develop during this age. Assuming that community college education aspired to induce growth in stages of thinking, it appeared that stage four students would be ideal late adolescent students. This late adolescent pattern of development was characterized more by a decrease in the usage of the two pre-moral orientations (stages one and two), and a concomitant increase in the use of the

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[1]Lawrence Kohlberg, "Child as Moral Philosopher," Readings in Developmental Psychology, ed. by Phebe Cramer (Del Mar, California: CRM Books, 1970), p. 113.

formal sanction orientation of type four than by any marked increase in the two highest stages of thinking.[1]

Pedagogical practice might also be influenced by implications from findings of Turiel in which he showed that individuals are better able to learn to utilize judgmental orientations one level above their modal orientation than they are able to learn to apply concepts from two levels above. Likewise, as might be expected, Turiel's subjects tended to reject advice that stemmed from the concepts of the level below their modal choice.[2] Thus, determination of the modal level of a given student might well influence the instructional practice in the educational task. At least tentative support was given in recent research to the notion that upward developmental changes in moral orientation occurred for some individuals at least to the age of nineteen.[3] However, at this stage of inquiry it might be premature to suggest pedagogical principles for adult education. Although adolescence was the age in which

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[1]Kramer, op. cit., p. 114.

[2]Turiel, op. cit., p. 97.

[3]Kramer, op. cit., p. 13.

Piaget's stage of moral operations was attained and the age range in which intelligence quotient curves began to level, it could be possible to view such findings in terms of measurement error, for instance, that I. Q. tests failed to tap the content areas in which adult cognitive development might be taking place.[1]

With reference to age related increases in moral judgment quotients (a phrase used by Kramer), evidence from the literature suggested a significant increase from high school to young adulthood. The clearest increase was from college age to young adult.[2]

In summary concerning age implications, the literature indicated the possible relevance of cognitive-developmental theory for instructional philosophy at the community college level.

Regarding socioeconomic class differences, data indicated that both middle-class and lower-class groups increased with age in moral quotient scores, with the middle-class starting at a higher level than the lower-class. The increases were less sharp in the middle-class

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[1] Ibid., p. 14. [2] Ibid., p. 43.

but the middle-class did maintain a marked increment in moral quotient scores over the lower-class group at all ages.[1] Implications from these data for community college educational philosophy might have relevancy when Brue's findings were noted, in which he found that occupational students generally came from lower socio-economic backgrounds than did transfer students.[2] This might have implied that occupational students as a group in the community college had lower moral quotient scores than transfer students, might be instructed accordingly, and might have been expected to have made relatively good progress in terms of moral judgment development.

With reference to the potential role of college and other environmental determinants of judgment, as opposed to parental determinants of judgment, Kramer's data suggested that adult moral level is the product of far more than an internalization of parental standards. He arrived at that conclusion by a comparison of father and son scores. It was shown that fathers and sons bore no special similarity in moral quotient or moral judgment

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[1] Ibid., p. 44.

[2] Brue et al., op. cit., p. 8.

even though tradition has suggested that moral judgments were the product of the internalization of the parents' standards.[1]

In summary concerning studies in the Piagetian tradition in America, a skeletal rationale was presented. Based on the analysis, it was evident that a case could be made for the notion that mental stages might be abstracted from the mental functions of rural community college students. Consequently, the notion that sequential progress in mental stages of development was frozen at an age below that of community college students might be refuted. Analysis of the literature supported the possibility that a crucial purpose of the community college could be an explicit attempt to engender the progression of students to a higher cognitive-developmental stage. Therefore, relevant theory and research supported the notion of the applicability of the cognitive-developmental approach to community college educational goals and tasks.

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[1]Kramer, op. cit., p. 81.

CHAPTER V

PRESENTATION AND ANALYSIS OF THE DATA RELATIVE TO THE UTILITY OF A STRUCTURAL-DEVELOPMENTAL PEDAGOGICAL THEORY

The purpose of this chapter was to present and analyze the data collected which were potentially relevant to the theoretical issues considered. Basic in the issues was the possible importance of a dimension, conceived after the notions of Piaget, which ran from concrete operations on the one hand to formal operations on the other.[1] As stated in Chapter IV, these notions might be placed on a concrete to abstract continuum. In the up-dated American version of the Piagetian tradition, Kohlberg postulated six relatively invariant sequential stages of development in thinking, as previously discussed at some length in Chapter I and in Chapter IV. In Chapter I,

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[1] Jean Piaget, "Cognitive Development in Children," in R. Ripple and V. Rockcastle (eds.), Piaget Rediscovered: A Report on Cognitive Studies in Curriculum Development (Ithaca, New York: Cornell University School of Education), 1964.

seven specific questions were outlined to be answered by data collection and analysis. In Chapter V each of the seven questions was treated in order, with presentation of the data in each relevant discussion.

Question Number One. College drop data compared by groups.

The first question to be answered was how the drop rates of lower ability rural community college students compared in (1) vocational-technical programs and (2) transfer programs, when the two groups were matched in measured ability.

Students referred to as lower ability students were those whose ACT scores were (1) a standard score in English of fifteen or less, or (2) a standard composite score of fifteen or less. This roughly constituted the lower quartile of students by local norms as indicated by test results. The categories of (1) vocational-technical and (2) transfer were so designated by each student on his own ACT answer sheet.

Table I, page 62, summarized the observed (O) and expected (E) incidences of occurrences in each category. Expected designations were carried out to nine places,

TABLE I

COLLEGE DROP DATA OF LOWER ABILITY

VOCATIONAL AND LOWER ABILITY

TRANSFER FRESHMAN STUDENTS

	Vocational-technical Students	Transfer Students	Totals
Hold	E 33.121621621 O 31	E 23.87837837 O 26	57
Drop	E 9.878378378 O 12	E 7.12162162 O 5	17
Totals	43	31	74

not because that much certainty was meaningful in the table, but because the computer used was accurate to fourteen and read to nine places. Rounding the computations would only have confused the figures for the critical values. In Table I, page 62, the critical value needed in order to reject the null hypothesis with one degree of freedom was 3.84 on a decision basis determined at the .05 level, as stated in Chapter I. The critical value obtained for Table I was 1.4121378665; therefore, the null hypothesis could not be rejected. On the basis

of these data no significant difference was established between the rate of school drops for (1) vocational-technical students of lower ability and (2) transfer students of lower ability. Insofar as a significant difference would have inferred that transfer courses of study were more difficult than vocational-technical courses of study, evidence for that inference was not obtained. In other words, no evidence was gained to indicate that a significant difference in difficulty level existed between (1) transfer courses of study and (2) vocational-technical courses of study. This lack of clarity on the issue of difficulty level would appear to concur with the indecisive findings of Fenske, cited on page 31 of Chapter III in this text.

Question Number Two. Course withdrawal data compared for vocational and transfer students within the range of lower ability.

The second question to be answered was how the withdrawals from first semester freshman level courses compared for matched ability students in (1) the vocational-technical programs and (2) the transfer programs.

Students referred to as lower ability students were those whose ACT scores were (1) a standard score

TABLE II

COURSE WITHDRAWAL DATA OF LOWER ABILITY

VOCATIONAL AND LOWER ABILITY

TRANSFER FRESHMAN STUDENTS

	Vocational-technical Students	Transfer Students	Totals
Courses Completed	E 145.1051051 O 144	E 156.8948948 O 158	302
Courses Not Completed	E 14.8948948 O 16	E 16.10511051 O 15	31
Totals	160	173	333

in English of fifteen or less or (2) a standard composite score of fifteen or less. This roughly constituted the lower quartile of students by local norms as indicated by test results.

The categories of (1) vocational-technical and (2) transfer were so designated by each student on his own ACT answer sheet. The number of courses in which the student(s) enrolled, the number of courses in which the student(s) received "W" or "I," and the differences, equalling the number of courses completed, were the basic

data units composing the cells of the table. The data in Table II, page 64, produced a critical value of .174022397 when programmed to a null hypothesis. Since a critical value of 3.84 was needed in order to reject the null hypothesis with the one degree of freedom present, the null hypothesis stood. No significant relationship was found to exist in the relative number of course withdrawals between (1) vocational-technical students and (2) transfer students, when the two groups were matched in tested developed ability. Insofar as a significant relationship might have inferred that transfer courses of study caused more withdrawals (or less) than vocational-technical courses of study, evidence for that inference was not obtained. While other authors might argue for a significant difference in demands for the two kinds of programs on other bases, no evidence was gained in Question Two to infer a significant difference in the two programs.

Question Number Three. Course withdrawal data compared for upper ability and lower ability students.

The third question to be answered was how the withdrawals from first semester freshman courses compared

TABLE III

COURSE WITHDRAWAL DATA OF LOWER ABILITY

AND UPPER ABILITY STUDENTS

	Lower Ability	Upper Ability	Totals
Courses Completed	E 308.7608318 O 302	E 226.2391681 O 233	535
Courses Not Completed	E 24.2391681 O 31	E 17.7608318 O 11	43
Totals	333	244	577

for (1) lower ability students and (2) upper ability students.

The pattern for the lower ability students as categorized continued as described in Questions One and Two. The upper ability students were those whose scores on the ACT were (1) a standard score in English of twenty-three or greater or (2) a standard composite score of twenty-three or greater. This roughly constituted the upper quartile by local norms although not by national norms.

The data in Table III, page 66, produced a

critical value of 4.651152081 when programmed to a null hypothesis. Since a critical value of 3.84 or greater was needed in order to reject the null hypothesis with the one degree of freedom present, the null hypothesis was rejected. A significant difference at the .05 level was found to exist in the relative number of course withdrawals for (1) upper ability freshman students as compared to (2) lower ability freshman students. In other words, the upper ability students had significantly fewer withdrawals.

Question Number Four. Grade point averages of lower and upper ability groups compared.

The fourth question was how the first semester freshman grades of measured lower ability students compared to the first semester grades of measured upper ability students. The pattern for the lower ability as categorized continued as described in Questions One and Two. The upper ability students were those whose scores on the ACT were (1) a standard score in English of twenty-three or greater or (2) a standard composite score of twenty-three or greater. This roughly constituted the upper quartile by local norms although not by national norms.

TABLE IV

A COMPARISON OF GRADE POINT AVERAGES

OF LOWER ABILITY STUDENTS TO

UPPER ABILITY STUDENTS

GPA	Lower Ability	Upper Ability	Totals
4.000 to 3.000	E 18.07940594 O 8	E 13.94059405 O 24	32
2.999 to 2.000	E 31.60396039 O 37	E 24.39603960 O 19	56
1.999 to 1.000	E 7.33663366 O 12	E 5.66336633 O 1	13
Totals	57	44	101

In making the comparison of semester grade point averages for the two categories of students, a 3 X 2 table was used (Table IV, page 68) in which the students' grade point averages were arranged into three groups, each made up essentially of one letter grade. The lowest group was a grade point average of 1.000 to 1.999 inclusive. The middle group was a grade point average of 2.000 to 2.999

inclusive. The highest group was a grade point average of 3.000 to 4.000 inclusive. No student had a grade point average below 1.000 because no "F" grades appeared on transcripts earned locally. Failing grades appeared as either "I" for Incomplete or "W" for Withdrawn. The "I" grade must later have been changed to a letter grade of "A," "B," "C," or "D" or it must have become a "W" for Withdrawn, even if it was changed at the end of the following full semester. In all of the instances in the above data, "I"s were viewed through the following full semester and, therefore, appeared either as "W"s or letter grades. With regard to the "W"s, these were not factors influencing the grade point averages. Only completed course credit was used in averages.

The data in Table IV, page 68, produced a critical value of 21.78098493 with the two degrees of freedom that were present in this table. A critical value of 5.99 or greater was required to reject the null hypothesis; therefore, the null hypothesis was rejected. A significant difference, then, was found to exist between the first semester freshman grades of lower ability students and the first semester freshman grades of upper students.

Question Number Five. Grade point averages of lower ability vocational-technical students compared to lower ability transfer students.

The fifth question to be answered was how the grade point averages of lower ability vocational-technical students compared to the grade point averages of lower ability transfer students. The grades earned during the first semester of the freshman year were used as the raw data. Because grades of Incomplete ("I") could be held through the following semester, the transcripts had to be complete through the spring semester.

In making the comparison of semester grade point averages for the two categories of students, a 3 X 2 plan (Table V, page 71) was used in which the students' grade point averages were grouped into three ranges, each made up of one letter grade. The lowest group was a grade point average of 1.000 to 1.999 inclusive, that is, everything just short of 2.000. The middle group was a grade point range of 2.000 to 2.999 inclusive. The highest group was a grade point average range of 3.000 and above. No student had a grade point average below 1.000 because no failing grades appeared on transcripts that were earned locally. Failing grades appeared as either "W" for

TABLE V

GRADE POINT AVERAGES OF VOCATIONAL AND TRANSFER LOWER ABILITY STUDENTS COMPARED

GPA	Vocational	Transfer	Totals
4.000 to 3.000	E 4.210526315 O 6	E 3.789473684 O 2	8
2.999 to 2.000	E 19.473668421 O 20	E 17.56631578 O 17	37
1.999 to 1.000	E 6.3.5789473 O 4	E 5.68421052 O 8	12
Totals	30	27	57

Withdrawn from the course or as "I" for Incomplete in the course. The "I" grades must have been changed to a letter grade of "A," "B," "C," or "D" values or it must have become a "W" for Withdrawn, even if it was changed at the end of the following semester. In all of the instances in the above data, "I"s were viewed through the following semester in which the grade was "earned" and, therefore, appeared either as "W" or a letter grade. "W"s were not

factors influencing the grade point averages. Only completed course credit with "A," "B," "C," or "D" values were used in the four point system. It was because of the above practices that both grade point averages and the number of course withdrawals were considered to have been important factors to be considered in arriving at an analysis of the student outcomes.

The data in Table V, page 71, produced a critical value of 2.894567692 with the two degrees of freedom present in the 3 X 2 table. A critical value of 5.99 or greater was required to reject the null hypothesis: therefore, the null hypothesis was not rejected. A significant difference was not demonstrated between the first semester freshman grades of lower ability transfer students and lower ability vocational-technical students.

Insofar as a significant difference might have inferred that transfer courses and programs of study were more (or less) difficult than vocational-technical courses and programs of study, no evidence was gained to infer a significant difference in the two programs and courses of study. The implications of these and other related local data were discussed more fully in Chapter VI.

Question Number Six. Cognitive stages of lower ability students compared to cognitive stages of upper ability community college students.

A moral dilemma tool was designed for this study as a measure of cognitive stages of mental functioning on a concrete to abstract dimension. It was a modification of Lawrence Kohlberg's dilemmas, as described on page six of Chapter I and more fully discussed in Chapter IV, pages 35 through 48. The complete form appeared as Appendix A.

The moral judgment situations were used as a qualitative measure of the mental stages of development of selected students in the community college setting. The groupings followed the same plan under which data were presented in answer to questions one through five above, except that response was not one hundred per cent. The numbers were given in the tabled data and the details were more fully discussed in Chapter I.

In each of the categories of students, three independent judges were used to rank the student responses on the dilemma opinionnaires. One judge was a Juris Doctorate, one a Theologian, and one a Language Professor. They were referred to as judges "A," "B," and "C"

TABLE VI-A

COGNITIVE STAGES DATA OF LOWER ABILITY

STUDENTS COMPARED TO UPPER ABILITY

STUDENTS FOR JUDGE A

Cognitive Stage	Lower Ability	Upper Ability	Totals
5	E 0.47368421 O 0	E 0.526315789 O 1	1
4	E 4.263157894 O 0	E 4.736842105 O 9	9
3	E 16.57894736 O 17	E 18.42105263 O 18	35
2	E 12.31578947 O 14	E 13.68421052 O 12	26
1	E 2.368421052 O 5	E 2.631578947 O 0	5
Totals	36	40	76

with no indication about which was which, and the judges themselves were unaware of student categories.

Question number six raised in Chapter I produced Tables VI-A, VI-B, VI-C appearances in Chapter VI, each corresponding to the judges' ratings. In this fashion, if one judge's ratings were statistically significant and another's were not, it was apparent to the reader.

The judges were instructed to rate each of the five student responses on Kohlberg's one through six stage ratings, and then were asked to make an overall judgment. The overall or global rating was to be a judgment rather than an average and had to have a round unit value. Global ratings were used for the data items.

Table VI-A, page 74, produced a critical value of 15.01347984, with four degrees of freedom. Since a critical value of 9.49 or greater was needed in order to reject the null hypothesis, the null hypothesis was rejected. A significant difference at the .05 level was found to exist between (1) lower ability and (2) upper ability students in cognitive stages, as rated by judge "A."

Judge "B" appeared rather consistently to rate statements of students higher on the stages than did judge "A." That is, the mean rating for judge "A" was lower than for judge "B," but the variances were quite similar. Judge "A" had no student statements rated in the sixth stage, while judge "B" had no student statements rated in the first stage.

Table VI-B, page 76, produced a critical value

TABLE VI-B

COGNITIVE STAGES DATA OF LOWER ABILITY

STUDENTS COMPARED TO UPPER ABILITY

STUDENTS FOR JUDGE B

Cognitive Stage	Lower Ability	Upper Ability	Totals
6	E 0.94736842 O 1	E 1.052631578 O 1	2
5	E 7.578947368 O 4	E 8.421052631 O 12	16
4	E 13.26315789 O 11	E 14.73684210 O 17	28
3	E 11.36842105 O 14	E 12.63157894 O 10	24
2	E 2.842105263 O 6	E 3.157894736 O 0	6
Totals	36	40	76

of 11.77442703 with four degrees of freedom. Since a critical value of 9.49 or greater was needed in order to reject the null hypothesis, the null hypothesis was rejected. A significant difference at the .05 level was found to exist between (1) lower ability and (2) upper ability students in cognitive stages, as rated by judge "B."

TABLE VI-C

COGNITIVE STAGES DATA OF LOWER ABILITY

STUDENTS COMPARED TO UPPER ABILITY

STUDENTS FOR JUDGE C

Cognitive Stage	Lower Ability	Upper Ability	Totals
6	E .47568421 O 0	E .526315 O 1	1
5	E 4.73684210 O 4	E 5.263157 O 6	10
4	E 3.78945368 O 2	E 4.210526 O 6	8
3	E 13.26315789 O 9	E 14.736842 O 19	28
2	E 8.52631578 O 12	E 9.473684 O 6	18
1	E 5.21052631 O 9	E 5.789473 O 2	11
Totals	36	40	76

Table VI-C, page 77, produced a critical value of 13.25210441, with five degrees of freedom. Since a critical value of 11.07 or greater was needed in order to reject the null hypothesis, the null hypothesis was rejected. A significant difference at the .05 level was found to exist

between (1) lower ability and (2) upper ability students in cognitive stages, as rated by judge "C."

With regard to Question Number Six of Chapter I, ratings of community college students' responses on five moral dilemmas by three independent judges produced data to suggest that a cognitive-developmental approach to rural community college pedagogy might have utilitarian value. Upper ability and lower ability students were compared in their demonstrated judgmental ability on five moral dilemmas. All three judges rated student responses significantly different for the two groups, demonstrating the functional aspects of the moral dilemma tool which was employed. Further discussion was devoted to the pedagogical implications of these findings in Chapter VI.

Question Number Seven. Cognitive stages of lower ability vocational-technical students compared to lower ability transfer students.

The seventh question presented in Chapter I to be answered was how the measured cognitive stages of vocational-technical students compared to the measured cognitive stages of transfer students, when the two groups

TABLE VII-A

COGNITIVE STAGES DATA OF LOWER ABILITY VOCATIONAL TECHNICAL STUDENTS COMPARED TO LOWER ABILITY TRANSFER STUDENTS

BY JUDGE A

Cognitive Stages	Vocational-Technical	Transfer	Totals
3	E 7.08333333 O 8	E 9.91666666 O 9	17
2	E 5.83333333 O 6	E 8.16666666 O 8	14
1	E 2.08333333 O 1	E 2.91666666 O 4	5
Totals	15	21	36

were matched on tested academic ability. Table VII-A, page 79, produced a critical value of 1.177238895 from a 3 X 2 tabulation with two degrees of freedom. Since a critical value of 5.99 was needed in order to reject the null hypothesis, the null hypothesis stood on the basis of the ratings of judge "A." That is, no evidence was gained at the .05 level of confidence that a significant difference existed between (1) the cognitive stages of vocational-technical students and (2) the cognitive stages

TABLE VII-B

COGNITIVE STAGES DATA OF LOWER ABILITY VOCATIONAL TECHNICAL STUDENTS COMPARED TO LOWER ABILITY TRANSFER STUDENTS

BY JUDGE B

Cognitive Stages	Vocational-Technical	Transfer	Totals
6	E .44444444 O 1	E .55555555 O 0	1
5	E 1.77777777 O 0	E 2.22222222 O 4	4
4	E 4.88888888 O 4	E 6.11111111 O 7	11
3	E 6.22222222 O 6	E 7.77777777 O 8	14
2	E 2.66666666 O 5	E 3.33333333 O 1	6
Totals	16	20	36

of transfer students, when the two groups had been matched for academic ability.

The ratings of student responses by judge "B" was presented in Table VII-B, page 80. A critical value of 4.812946097 was obtained from the 2 X 5 table. A critical value of 11.07 or greater was needed in order to reject

TABLE VII-C

COGNITIVE STAGES DATA OF LOWER ABILITY VOCATIONAL TECHNICAL STUDENTS COMPARED TO LOWER ABILITY TRANSFER STUDENTS

BY JUDGE C

Cognitive Stages	Vocational-Technical		Transfer		Totals
5	E	1.77777777	E	2.22222222	
	O	2	O	2	4
4	E	.88888888	E	1.11111111	
	O	0	O	2	2
3	E	4.00000000	E	5.00000000	
	O	5	O	4	9
2	E	5.33333333	E	6.66666666	
	O	3	O	9	12
1	E	4.00000000	E	5.00000000	
	O	6	O	3	9
Totals		16		20	36

the null hypothesis at the .05 level of confidence. The data did not support a rejection of the null hypothesis. That is, no evidence was gained at the .05 level of confidence that a significant difference existed between (1) the cognitive stages of vocational-technical students

and (2) the cognitive stages of transfer students, when the two groups had been matched for academic ability.

Table VII-C, page 81, presented the data by Judge "C" regarding cognitive stages of lower ability vocational-technical and lower ability transfer students. A critical value of 5.73749999 was obtained. Since a critical value of 11.07 or greater was needed in order to reject the null hypothesis at the .05 level, the null hypothesis stood. No evidence was gained at the .05 level of confidence that a significant difference existed between (1) the cognitive stages of vocational-technical students and (2) the cognitive stages of transfer students when the two groups had been matched for academic ability.

Insofar as a difference in cognitive stages of development between (1) lower ability transfer and (2) lower ability vocational-technical students might infer either a capability level or a course difficulty level difference in these two kinds of programs, no evidence was gained to support such an inference of a difference in difficulty level.

In summarizing the results of the data gained from the seven questions of Chapter I, it was possible

to relate the data to two basic suggestions. The first suggestion was the possibility that data could be gained to support the notion that community college teachers of transfer courses required more abstracting ability of lower ability students than did teachers of vocational-technical courses. Chapter I questions numbered one, two, five, and seven related to the first suggestion. In none of these four data searches, presented in Tables I, II, V, and VII, did significant evidence emerge to infer a difference in the required level of abstracting ability. To briefly summarize these findings, no significant evidence to infer a difference in difficulty levels was found from (1) school drop data, (2) course withdrawal data, (3) grade point average data, or (4) cognitive stages data.

The second basic suggestion was really the two sides of one issue, namely, the suggestion that a positive relationship existed between cognitive stages of development and measured academic ability. Questions three, four, and six related to this suggestion. In all of these data searches, presented in Tables III, IV, VI-A, VI-B, and VI-C, significant evidence at the .05 level emerged

to infer a positive relationship between cognitive stages and academic ability. To briefly summarize these findings, significant evidence emerged from (1) course withdrawal data, (2) grade point average data, and (3) cognitive stages data rated by three independent judges. The data lend support to the notions that (1) community college students measuring in the lower ranges in developed ability also measured relatively low in cognitive stages of development and (2) community college students measuring in the upper ranges of developed ability also measured relatively high in cognitive stages of development.

These summarized findings were stated in more concise form in Chapter VI and incorporated with other chapter summaries. The condensed summaries were then manageable units that led to conclusions and recommendations.

CHAPTER VI

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

The purpose of Chapter VI was to present a summary of the findings and to review the conclusions drawn from a consideration of the findings.

Suggestions regarding the nature of the educational task in the rural community college included:

1. Teachers of transfer courses offered on the campus under study required more abstracting ability of lower ability students than did teachers of vocational-technical courses.
2. Community college students measuring in the lower ranges in developed ability also measured relatively low in cognitive stages of development as exemplified by responses on moral dilemmas.
3. Community college students measuring in the upper ranges of developed ability also measured relatively high in cognitive stages as exemplified by responses on moral dilemmas.

In the discussion of the issues regarding the nature of the educational task of the rural community college, evidence and argument from both the immediate research data and from relevant sources of the broader literature were incorporated.

SUMMARY

Abstracting Ability Required of Lower Ability Students

No substantial evidence from the data supported the notion that a difference existed between the student abstracting ability required by teachers of (1) transfer courses and (2) vocational-technical courses. Perhaps this rather surprising suggestion does not differ from the observations of Brue, Engen, and Maxey in noting that although two-thirds of the entering two-year students planned to transfer only one-third of them actually transferred.[1] Munday found that transfer students scored higher on academic examinations,[2] but this was not too meaningful for the purposes of this inquiry because the community colleges profess an open door policy with no

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[1]Brue et al., op. cit., p. 8.

[2]Munday, op. cit., p. 328.

failures. It was for these reasons that the two groups were matched for ability, and for these same reasons that the lower ability groups were used. In this same vein, Fenske had found that occupational students generally came from lower socioeconomic backgrounds and showed less scholastic aptitude than did transfer students; yet the occupational students made higher grades.[1]

Empirical data that might have occasioned the inference that a difference in the abstracting demanded in the two groups (vocational and transfer) existed might have been gained from (1) relative rates for school drops, (2) relative rates for withdrawals from courses, (3) relative grade point averages earned and (4) relative ratings on the moral dilemma tool employed. Once the two groups had been matched as lower ability groups, in none of the aspects mentioned above was a .05 level of significant difference demonstrated.

In addition to Fenske's findings and those in this study, an argument from silence might be made regarding the likenesses between vocational-technical and transfer

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[1]Fenske, op. cit., p. 6.

students, courses, and programs. As Roueche had indicated, the need for definitive local research on general versus occupational education was great.[1] In the light of data obtained and discussed in Chapter V, perhaps investigation into vocational-technical areas rather than transfer areas proved fruitless, especially if the setting of the programs was the community college.

In summary regarding the relationships of vocational-technical courses and transfer courses, the following observations were made about the abstraction level required:

1. No evidence was obtained to support the notion of a true difference.
2. Limited data from other literature lends no support to the notion of a true difference.
3. An argument from silence suggests no true difference existed.

In the absence of a demonstrated difference between the required abstracting ability of vocational-technical and transfer students of lower ability, consideration must be given to the possibility that the two

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[1]J. E. Roueche, op. cit., p. 21.

kinds of programs had students who were basically more alike than different. Some implications from this possibility were considered later in this chapter.

Cognitive Stages and Academic Ability

The second and third suggestions of Chapter I were a logical unit which presupposed a positive relationship between cognitive stages and measured academic ability. Suggestions two and three were as follows: (2) community college students measuring in the lower ranges in developed ability also measured relatively low in cognitive stages of development as exemplified by responses on moral dilemmas and (3) community college students measuring in the upper ranges of developed ability also measured relatively high in cognitive stages as exemplified by responses on moral dilemmas.

Among the implications in these statements was the assumption of a positive relationship between academic ability and cognitive stages because of the basic factor of mental functioning underlying both. The theoretical intricacies of these implications were discussed in Chapter V. Kohlberg had identified six qualitatively

different modes of thought followed in the moralization process,[1] and these stages were used as measures of mental function or development. Both Jean Piaget[2] and Lawrence Kohlberg[3] had demonstrated evidence for the universal and invariant nature of these stages of development. When nonparametric techniques were applied, a cognitive stage difference at the .05 level of significance was found to exist between the lower academic ability and the upper academic ability students. This finding appeared to concur with those previously demonstrated by Robert Cattell[4] in which he found that the influence of intelligence on children's social attitudes and behavior was such that intelligence had a greater number of social-behavior correlates among the factors than any other observed aspect of personality.

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[1]Lawrence Kohlberg, "Development of Moral Character," p. 306.

[2]Jean Piaget, The Psychology of Intelligence, pp. 60 ff.

[3]Lawrence Kohlberg, "Cognitive-Developmental Approach," p. 356.

[4]Robert B. Cattell, Personality and Motivation: Structure and Measurement (New York: World Book, 1957).

The demonstration of a significant difference in cognitive stages of upper ability students compared to lower ability students also concurred with the research of Kohlberg's in which he indicated that the process of moral (intellectual) development was more gradual and long term than had been pictured.[1] More precisely, as one judge in this study demonstrated, the cognitive functions of many community college students may be surprisingly low, such as stage one or two. This recognition of low mental functions might have extensive ramifications for an overall philosophy of education at the community college level. If, indeed, the philosophy of the community college movement is to extend educational opportunity to all citizens of this nation, then the philosophy of pedagogy inside the classroom might be devised accordingly. Translated into Piagetian terms this might mean courses which include concrete operations rather than abstract or formal operations.

The data from inquiry about cognitive stages in the community college population also appeared to concur with the judgment of R. B. Kramer who theorized that the

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[1]Kohlberg, Development of Moral Character, p. 306.

lower stages of judgment (stage one, two, or three) certainly existed into adulthood. He further concluded that it was primarily only individuals who had not developed a stable stage four orientation by the last year of high school who continued to develop during this age (adulthood).[1] In this connection, judges on the stages for local students ranked most of them in stage two, three, or four (see Tables VI-A, VI-B, and VI-C). This range appeared to be a prime area where the community college movement might more successfully meet the educational challenge before it, if it were to adjust its purposes and techniques accordingly. This kind of adjustment might be in the direction of a more pragmatic cognitive-developmental approach to the task.

In summary regarding supportive evidence for the utility of a cognitive-developmental-structural approach to the rural community college educational task, the following observations were made:

1. Course withdrawal data, grade point average data, and cognitive stages data indicated the utility of a cognitive-developmental approach.

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[1]Kramer, op. cit., p. 161.

2. Consistency and Adaptation-level theories about human thought processes offered the possibility of a favorable climate for an interactional approach such as the one investigated.
3. The literature within the community college framework supported the need for a more comprehensive philosophy of education than had crystalized in the community college movement.
4. The literature which had explored the ramifications of the Piagetian tradition in America provided a rationale for a cognitive-developmental-structural approach.

CONCLUSIONS

Conclusions drawn from the summary of findings were of two diverse kinds, one major and one minor. The minor conclusions were somewhat incidental and divergent from the main issue. The major conclusions followed a progression of thought pertaining to the utility of a cognitive-developmental approach to the rural community college educational task. The minor conclusions were presented first so that the major conclusions might receive final attention.

The minor conclusions were of a limited and implicatory nature as follows:

1. A need for more extensive examination and empirical investigation of vocational-technical education, with appropriate conceptual constructs, was apparent. Appropriate constructs might include more analysis of student rather than job variables.
2. In the investigation of occupational, or vocational-technical educational philosophy and practice, more consideration might be given to potential differences in programs in (1) community college and (2) post-secondary non-college settings.

The major conclusions of this study were arranged in a progression of thought pertaining to the utility of a cognitive-developmental-structural approach to the educational philosophy of the rural community college. These conclusions were as follows:

1. Evidence from literature and empirical investigations demonstrated the need for a broadly based psychology of education not presently apparent in the community college movement.

2. Vocational-technical programs presented no unique solution to the breadth of the educational task.
3. The diversity in student capability demanded a more universal basis for a philosophy of education, such as the cognitive-developmental approach which was examined in this study.
4. Evidence from the literature and empirical inquiry destroyed the myth that the Piagetian tradition was age-bound at a level below community college functions.
5. The Piagetian tradition as developed in America provided a universal kind of basis for a philosophy of education at the community college level. The essential ingredients of this philosophy of education acknowledged the futility of assuming that community college students could function adequately at highly abstract levels of thought. The reality and nature of this educational task was thought to be best explained by a philosophy of education which acknowledged the limitations of the students in question and provided notions for solutions. Analyses of cognitive stages of

development and regimes to facilitate progression to the next stage of cognitive development appeared to promise desirable outcomes.

6. The natural diversity of the community college setting studied was conducive to a broadly based psychology of the individual student.
7. Cognitive stages were abstracted from the mental functions of students involved in the study and found to be relevant to the educational processes of the community college.
8. The implementation of a definitive cognitive-developmental approach to the educational task of grades thirteen and fourteen would have the advantage of providing a continuity with the educational modes of grades one through twelve.

RECOMMENDATIONS

Certain pedagogical implications and recommendations appeared to emerge from the study. Recommendations to be considered for a community college philosophy of education were stated in the following form:

1. A structural-developmental approach to community college education appeared to have utility. This

would amount to a recognition that public education can be conceived of as a continuation through grade fourteen, that the development from high school grades can continue, and that the educational task can be designed to benefit all citizens.

2. Qualitative differences in stages of mental development appeared to exist and these were different in kind. Conceivably the community college teacher could be teaching six basically different kinds of students' minds in one classroom. In that event the teacher might design his instruction to best induce progress to the next stage for each student.
3. An incremental approach to the developmental task might be utilized. In this approach the lower-class groups can increase relatively rapidly, even though they may never catch the middle or upper class (see Kramer's observations listed in Chapter V, page 57, of this text).
4. Invariant sequence might be assumed to exist in developmental stages. The educational task might

be designed to speed up development through sequential stages but the skipping of stages might not be expected to occur. That is, stage six abstractions, for instance, would not be immediately taught or induced. Arrival would be sequential and modal.

5. Cognitive stages might be hierarchial integrations in which increasingly differentiated and integrated structures fulfill a common function. The teacher might expect cognitive structure to be motivationally functional and might expect to become involved in affective and motivational factors in teaching.

6. The foregoing recommendations constituted only some of the theoretical bases of a philosophy of education for the community college. The precise and detailed aspects of a philosophy were beyond the limits of this study. However, with the emerging evidence and basic rationale clarified, an explicit development of pragmatic aspects of a cognitive-developmental philosophy of education for the community college was recommended. Although within

the general framework of the Piagetian tradition, this philosophy of education would require the exploration of new tools, techniques, approaches, and insights within the general constructs of the theory.

7. Empirical assessments and evaluations of the suggested cognitive-developmental-structural approach would require extensive development. Student outcomes with reference to defined objectives for community college education would be required in order to assess empirically the viability of emerging implementations of the cognitive-developmental-structural approach.

In conclusion, logic and evidence were presented to support the utility of a cognitive-developmental-structural approach, patterned after the Piagetian tradition in America, as a basis for a community college philosophy of education.

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APPENDIX A

SAMPLE OPINIONNAIRE

O P I N I O N N A I R E

Name: _____

YOUR FEELINGS AND IDEAS CAN BE USEFUL IN PLANNING COURSE OFFERINGS. THIS QUESTIONNAIRE INVOLVES ONE OF THE MODERN STRUCTURAL APPROACHES TO LEARNING. PLEASE, FOR EACH SITUATION, EXPLAIN AS WELL AS YOU CAN YOUR REASONS FOR FEELING AND THINKING AS YOU DO.

Situation I

In Europe, a woman was near death from a special kind of cancer. There was one drug that the doctors thought might save her. It was a form of radium that a druggist in the same town had recently discovered. The drug was expensive to make, but the druggist was charging five times what it cost him to make the drug. He paid $400 for the radium and charged $2,000 for a small dose of the drug. The sick woman's husband, Heinz, went to everyone he knew to borrow the money, but he could only get together about $1,000, half of what it cost. He told the druggist that his wife was dying and asked him to sell it cheaper or let him pay later. But the druggist said, "No, I discovered the drug and I'm going to make money from it. I won't let you have it unless you give me $2,000 now." So Heinz got desperate and broke into the man's store to steal the drug for his wife.

Should Heinz have done that? Why?

Situation II

The drug didn't work, and there was no other treatment known to medicine which could save Heinz's wife. So the Dr. knew that she had only about six months to live. She was in terrible pain, but she was so weak that a good dose of painkiller like ether or morphine would make her die sooner. She was almost crazy with pain, but in her calm periods she couldn't stand the pain and she was going to die in a few months anyway.

Should the Dr. do what she asks and give her the drug that will make her die? Why?

Situation III

In Korea, a company of Marines was way outnumbered and was retreating before the enemy. The company had crossed a bridge over a river, but the enemy were mostly still on the other side. If someone went back to the bridge and blew it up as the enemy were coming over it, it would weaken the approaching enemy. With the head start the rest of the company would have, they could

probably then escape. But the man who stayed back to blow up the bridge would probably not be able to escape alive; there would be about a 4 to 1 chance he would be killed. The captain of the company has to decide who should go back and do the job. The captain himself is the man who knows best how to lead the retreat. He asks for volunteers, but no one will volunteer.

Should the captain order a man to stay behind, or stay behind himself, or leave nobody behind? Why would that be best?

Situation IV

The captain finally decided to order one of the men to stay behind. One of the men he thought of was one who had a lot of strength and courage but he was a bad troublemaker. He was always stealing things from the other men, beating them up and wouldn't do his work. The second man he thought of had gotten a bad disease in Korea and was likely to die in a short time anyway, though he was strong enough to blow up the bridge.

If the captain was going to send one of the two men, should he send the troublemaker or the sick man? Why?

Situation V

Two young men were in trouble. They were secretly leaving town in a hurry and needed money. Al, the older one, broke into a store and stole $500. John, the younger one, went to a man who was known to help people in town. John told the man that he was very sick and he needed $500 to pay for the operation. Really he wasn't sick at all, and he had no intention of paying the man back. Although the man didn't know John very well, he loaned him the money. So John and Al skipped town, each with $500.

Who did worse, Al who broke into the store or John who borrowed the money with no intention of paying it back? Why?

INSTRUCTIONS TO JUDGES

Rank each situational response on the opinionnaire by making a judgment about the qualitative nature of the thought process involved. For ranking purposes, the three levels may be ignored, with judgments made in stages only. The premoral level includes stages 1 and 2. The conventional level includes stages 3 and 4. The principled level includes stages 5 and 6. Following are descriptions of the stages:

1. Obey rules to avoid punishment.
2. Conform to obtain rewards, have favors returned, and so on.
3. Conform to avoid disapproval, dislike by others.
4. Conform to avoid censure by legitimate authorities and resultant guilt.
5. Conform to maintain the respect of the impartial spectator judging in terms of community welfare.
6. Conform to avoid self-condemnation.

In terms of the value of human life the six stages can be defined:

1. The value of a human life is confused with the value of physical objects and is based on the social status or physical attributes of its possessor.
2. The value of human life is seen as instrumental to the satisfaction of the needs of its possessor or of other persons.
3. The value of a human life is based on the empathy and affection of family members and others toward its possessor.
4. Life is conceived as sacred in terms of its place in a categorical moral or religious order of rights and duties.
5. Life is valued both in terms of its relation to community selfare and in terms of life being a universal human right.
6. Belief in the sacredness of human life as representing a universal human value of respect for the individual.

After attempting to rank each situation, please respond with a global judgment. Thst is, treat the entire response pattern in the opinionnaire as a principal orientation used by the subject and rank it either 1, 2, 3, 4, 5, or 6 in the Global Score blank

SAMPLE JUDGE'S RATING SHEET

Opinionnaire No. _____

Scoring (1 through 6):

Situation 1 ___

Situation 2 ___

Situation 3 ___

Situation 4 ___

Situation 5 ___

Global _____

APPENDIX B

A FOLLOW-UP STUDY BY STUDENT SERVICES

The following included the essentials of the summary of a previous survey conducted by Ronald Hopkins at the campus involved in this dissertation study. The data were considered potentially relevant as background information.

This study was attempted to establish the image of the Kansas community college under study as reported by the graduates of the classes of 1966, 1967 and 1968. These graduates were selected to participate in this study because they had completed part or all of their junior college work after the junior college became a separate entity in 1965. Before that date the junior college was part of the public school system. The three areas of investigation concerned the academic, extra-curricular, and advisee-advisor programs of the college. It was assumed by the writer that the graduates of these three classes could provide the image of the junior college in these three areas. This would not only enable the college to define but also to redefine its position in relationship to the students and allow the college to be better able to state its position to future students.

Since no research of this type had been conducted prior to this study at the junior college, the results of

the study can only serve as base data for the college under study and cannot be broadened to include other populations. The image, as furnished by this base data, is needed by the junior college since it now is a separate entity and is trying to meet the community college concept.

The instrument used to provide these data was a questionnaire developed especially for this study. The questionnaire covered the areas of academic, extra-curricular, and advisee-advisor programs of the junior college. The questionnaire was mailed to the 190 graduates of the 1966, 1967 and 1968 classes of the college in the study during December of 1968, or which 112 or 59 per cent were returned and used in analyzing the data.

The questionnaires returned by the post office as being undeliverable were remailed after the graduate's parents were contacted by telephone, to get the graduate's most recent address. This enabled the writer to have all of the questionnaires delivered. At the end of six weeks, the questionnaires ceased to be returned, and the data collection phase of the study closed. The information from the returned questionnaires was interpreted and tabulated by year and placed on a master questionnaire.

All questionnaires were verified for accuracy, and any noted irregularities were corrected. The tabulated information has been placed in tables and indicated as either raw numbers or percentages. Percentages were calculated to the nearest per cent and adjusted as necessary to make totals equal 100 per cent.

The responses returned indicated the majority of the respondents were satisfied to some degree with the three major areas of investigation. The over-all image of the extra-curricular program, as indicated by each class, denotes a gradual increase in satisfaction from each preceding year. The class of 1966 indicated 70 per cent were satisfied to some degree, while the class of 1967 indicated 79 per cent were satisfied to some degree, and the class of 1968 indicated 85 per cent were satisfied to some degree toward the total extra-curricular program at the junior college.

The image as indicated by the respondents toward the total advisee-advisor program denotes a gradual increase in satisfaction by each class from its preceding class. Sixty-five per cent of the class of 1966 indicated some degree of satisfaction, compared to 73 per cent, as

indicated by the class of 1967, and also indicated by 86 per cent of the class of 1968.

The academic image of the junior college has also been indicated as satisfactory to some degree, by each of the graduating classes. The class of 1966 indicated 75 per cent were satisfied to some degree. The graduates of 1967 indicated 79 per cent were satisfied to some degree, and the class of 1968 indicated 85 per cent were satisfied to some degree with the total academic program as offered by the community junior college involved in the study.

The study was exploratory, and as information was collected and analyzed many possibilities for additional research became apparent.

A refinement of this investigation might prove productive if a large number of graduates from another section of the state were studied. Such a study could indicate whether the community junior college involved in this study was typical of other junior or community colleges in Kansas or in the nation. Also, more useful information might be gathered using different forms of the questionnaire and design. It would be possible to

redesign the questionnaire so that students in programs training directly for employment could be separated from students in programs without goals of this nature. A comparison for such a division of the graduates would provide a better assessment of the effectiveness of the vocational programs than a comparison of transfer and terminal students. Separate studies could also be developed and used extensively in each of the academic, extra-curricular, and advisee-advisor programs of the junior college.

A follow-up of the junior college graduates who went into the military service might provide information to make the junior college training more useful for this group. How does this type of graduate use his junior college training? How does it serve him in the military? And what part, if any does his junior college experience play in his eventual career success, or his college success, or his college success if he chooses to continue his education?

The present research revealed that of the students who were enrolled in the junior college, many completed the requirements for graduation. These must be considered

serious students since they completed an organized program. A study in depth of this type of student might reveal needs and interests different from those of other students from whom junior college programs have also been designed. Such information might make it possible to develop more meaningful community junior college programs for the district.

One other important area of study must be noted before the subject of further research is concluded. The requirements for employment in a changing job market would be worthy of constant study to assist the community junior college in preparing their graduates for lifetime careers. With rapid technological changes taking place today, it is important that such information be current and applicable to the local community served by the junior college. One of the objectives of the junior college is the training of students for employment. The junior college might well establish a continuous research project to keep abreast of anticipated local employment needs. With current information the junior college would be able to provide its students with the information, skills, and attitudes necessary to succeed in anticipated job openings. This

research could also provide useful information to those responsible for community junior college education.

The results of this study should furnish a source of information for the community junior college involved in this study. The majority of the students used in this study were satisfied in the areas investigated. However, there was variation in the ways the students responded. The college might benefit from an examination of the areas in which the responses indicated deviation. It would be fruitful to repeat this study, including a survey of how faculty and administrators see their school and how they would like the school to be. Do administrators and faculty tend to be more satisfied with their school than the students? Are their ideals for a school similar to those of the students?

Since the students at this junior college seemed to hold similar ideals, it would be worthwhile to try to find out why some schools are perceived to have different environments than others.

The student council might do well to examine the ways in which their school does not live up to the ideals of the student body. In some cases, students themselves

might take the initiative in helping bring about changes.

This study leaves many questions unanswered. Do students with high grade averages view a school in a different way than those with low grade averages? Do in-district students view the junior college differently than out-of-district students?

While the school in this study was old in terms of years, it was new in terms of entity and campus and was expanding rapidly in the size of its student body. Follow-up studies might show significant changes in students' attitudes because of changing environment and physical facilities. A school starting out in a group of small, temporary buildings might have a different atmosphere when it moves to a permanent, well-planned campus. Also, the school was having a number of faculty changes. If this situation improves as the school becomes more settled, there might be a corresponding change in student attitudes.

The junior college administrators and faculty could probably profit by a program of periodic self-evaluation. If student ideals are greatly different from faculty ideals, new means of communication

between students and faculty need to be explored. If ideals of students and faculty are similar, then, perhaps, there needs to be a joint effort to close the gap between what is desired and what is perceived to exist.